

CLAIMS

1. A crossover hose for communicating fuel between two fuel rails of a fuel-injected, spark-ignited internal combustion engine comprising:

a polymeric tubular member having opposite end connections for joining with said fuel rails;

5 a main body connected with said end connections having a flattened portion for damping pressure pulsations within said hose.

2. A crossover hose as described in claim 1 wherein said hose is fabricated from a molded plastic material.

3. A crossover hose as described in claim 1 wherein said hose is fabricated from Nylon™.

4. A crossover hose as described in claim 1 wherein said flattened portion has an enlarged width with respect to said end connection.

5. A crossover hose as described in claim 1 wherein at least one of said end connections is continuous with an enlarged nonflattened leg juxtaposed between said end connection and said flattened portion.

6. A crossover hose as described in claim 1 wherein said flattened portion has a width significantly larger than said end connection.

7. A crossover hose as described in claim 1 having a generally U-shape channel with extending legs connected to said end connections and wherein said flattened portion is between said legs.

8. A crossover hose as described in claim 1 further including a fluid flow restrictor.

9. A crossover hose for communicating fuel between two fuel rails of a fuel-injected, spark-ignited internal combustion engine comprising:

a plastic tubular member having opposite end connections for joining with said fuel rails; and

- 5 a main body connected with said end connections and forming a U-shape channel therewith, said main body having a flattened portion with a width generally larger than the width of said end connections for damping pressure pulsations with said hose.

10. A fuel rail assembly for a fuel-injected spark-ignited internal combustion engine comprising:

first and second fuel rails, each said fuel rail formed by a tube having a plurality of injector outlets, at least one fuel rail having an inlet for receiving pressurized fuel, and each said fuel rail having orifices to allow for fluid communication between said fuel rails;

a first crossover hose for communicating fuel between said fuel rails, said crossover hose including:

- 10 a polymeric tubular member having opposite end connections for connection with said fuel rail orifices; and

a main body connected with said end connections having a flattened portion for damping pressure pulsations within said hose.

11. A fuel rail assembly as described in claim 10 wherein said fuel rails are parallel spaced from one another.

12. A fuel rail assembly as described in claim 10 wherein each of said first and second fuel rails has at least two separate orifices to allow for fluid communication of fuel between said fuel rails and wherein there is a second crossover hose for communicating fuel between the fuel rails, said second crossover hose being a polymeric tubular member having opposite end connections with said fuel rail orifices.

13. A fuel rail assembly as described in claim 12 wherein said first and second crossover hoses are non-symmetric with one another.

14. A fuel assembly as described in claim 13 wherein said one of said hoses has a fluid flow restrictor.

15. A fuel assembly as described in claim 12 wherein said second crossover hose has a main body with a flattened portion for damping pressure pulsations.

16. A fuel rail assembly as described in claim 10 wherein each of said first and second fuel rails has at least two separate orifices to allow for fluid communication of fuel between said fuel rails and wherein there is a second crossover hose for communicating fuel between said fuel rails, said second crossover hose being a polymeric tubular member having opposite end connections with said fuel rail orifices and wherein one of said fuel rail has an end fitting connection with one of said hoses, and said fitting connection has a fluid flow restrictor therein.

17. A fuel rail assembly for a fuel-injected spark-ignited internal combustion engine comprising:

first and second fuel rails, each said fuel rail formed by a tube having a plurality of injector outlets, at least one fuel rail having an inlet for receiving pressurized fuel, and each said fuel rail having an orifice to allow for fluid communication between said fuel rails;

a metal crossover tube for communicating fuel between said fuel rails, said tubes having a connection at opposite ends within each said rail; and

at least one fluid flow restrictor at one tube connection for damping pressure pulsations within said rails and to balance flow therebetween.